

Building in-situ instruments for the Street Sonatas #1 and #5

Hans Roels

Belgium



In the past years sound artist Hans Roels (1971) has focussed on making music for locations outside the concert hall. In 2014 he finished his Ph.D. at the School of Arts Ghent (Belgium), where he also gave a live electronics course for ten years. He has worked as a researcher in the Orpheus Institute and the Royal Conservatoire of Antwerp. His articles and chapters have been published in peer-reviewed journals (a.o. *Musicae Scientiae*) and books published by Leiden University Press and Leuven University Press. In 2021 he started a company for podcast production and interactive audio applications. (photo credit: Wouter Cox)

E-mail: info@hansroels.be

Website: www.hansroels.be

In the Street Sonatas two performers play on metal street objects (a bench, fence, play structure for children, etc.). With contact microphones, laptops, controllers, and percussion mallets they transform these objects into music instruments. Similar to my other works since 2015, the Street Sonatas are in-situ music performances, i.e. sound dialogues with the direct environment of a park, street, public square, etc. Features of the street object and the environment are explored and extended through physical, architectural, electric, digital, and performance-related tools. The technical set-up is not designed to create an immersive virtual instrument, silencing the surroundings. The Street Sonatas remain linked to the daily sound and environment of the street object. The focus is on a time- and site-specific construction – built around the street object – linking people, animals, plants, objects, and natural forces with each other and making them co-vibrate as an overarching music instrument.

In the Street Sonatas Pd is used for preparatory analysis and real-time processing. The analysis aims at detecting pitches, harmonics, and other audio features of the street objects. Next, these features are integrated in the real-time patches, for example to create tunings that fit the street objects. In this description I focus on the technical set-up and performance techniques of the Sonatas #1 and #5, which appear in the first video on <https://vimeo.com/streetsonatas>

Both Sonatas #1 and #5 share a preference for harmonic timbres (in contrast with other Street Sonatas) and a segmentation into pitch-rhythm notes. The latter is obtained by a performance technique in which both players perform on a keyboard controller with one hand, just before beating on the street object with the other. When combined with pitch-shifts, the first hand changes the pitch of the contact microphone input, while the second controls the loudness and timbre. In Sonata #1 the harmonic timbre is accentuated by attaching the contact microphone to a spot (of the street object) with a clear pitch, diminishing the inharmonic reverb with both digital gate effects and physical mutes – such as hose clamps or sand bags –, and next applying a digital reverb to boost the pitched frequency range. In Sonata #5 the natural reverb is left untouched and the harmonic quality is obtained by applying a frequency shift – derived from the preparatory analyses – before the pitch-shifts.

In Sonata #5 an extra object is swung against the street object and both have a contact microphone attached. The swinging movement and the collision of materials create irregular, hard to control attacks and postvibrations when the objects just (not) touch each other. On purpose, the distinction between action and reaction – performer and environment – is blurred. This is enforced by multiple delay lines that individually consist of two subdelays, the first one slightly shorter, detecting onsets of the swinging

movement and next, segmenting the second subdelay with pitch-shifts into new 'notes'. In this way the performers, collisions of materials and Pd patch all give different segmentations and interpretations to the swinging (sound) movement and scatter it through the surroundings.